

Navy Sea Pay: History and Recent Initiatives

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Form Approved OPM No. 0704-0188

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1. REPORT DATE: Dec 2001	2. REPORT TYPE: Final	3. DATES COVERED: N/A
4. TITLE: Navy Sea Pay: History and Recent Initiatives		5a. CONTRACT NUMBER: N00014-00-0700
6. AUTHOR(S): Golding, Heidi L. W.; McArver, Susan C.		5c. PROGRAM ELEMENT NUMBER: 65154N 5d. PROJECT NUMBER: R0148
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES): Center for Naval Analyses 4825 Mark Center Drive Alexandria, Virginia 22311-1850		8. PERFORMING ORGANIZATION REPORT NO.: CRM D0003611.A2
9. SPONSORING AGENCY NAME(S) AND ADDRESS(ES): DASD, Military Personnel Policy 4000 Defense Pentagon Washington, DC 20301-4000		10. SPONSOR ACRONYM(S): N/A 11. SPONSOR REPORT NO.: N/A
12. DISTRIBUTION AVAILABILITY STATEMENT: Unlimited		13. SUPPLEMENTARY NOTES: N/A
14. ABSTRACT: The Ninth Quadrennial Review of Military Compensation (QRMC) is reviewing the role of the military compensation system in past recruiting, manning, and retention shortfalls in search of ways to better structure compensation to mitigate these problems in the future. A synopsis of sea pay is presented in this paper. First, the purpose of sea pay and how it has changed through the Navy's history is addressed: who has been eligible for sea pay and the size of sea pay relative to basic pay and to manpower expenditures. Secondly, sea pay as it has been used in the recent past is described including: the sea pay table; incentives; and, survey and actual behavioral data. Thirdly, reforms to sea pay currently being implemented are detailed, along with the Navy's objectives and options. Finally, the implications for a new service-wide deployment pay are considered.		
15. SUBJECT TERMS: Compensation, incentives, naval personnel, personnel retention, recruiting, salaries, sea duty, sea pay, shortages		
16. SECURITY CLASSIFICATION: a. REPORT: Unclassified b. ABSTRACT: Unclassified c. THIS PAGE: Unclassified	17. LIMITATION OF ABSTRACT: SAR	18. NUMBER OF PAGES: 58 19. NAME/PHONE OF RESPONSIBLE PERSON: Donald J. Cymrot, (703) 824-2313

Standard Form 298 (Rev. 8-98)Prescribed by ANSI
Std. Z39.18

20021104 049

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Overview

The Ninth Quadrennial Review of Military Compensation (QRMC) is reviewing the role of the military compensation system in past recruiting, manning, and retention shortfalls in search of ways to better structure compensation to mitigate these problems in the future. Structured correctly, basic pay and special pays should provide incentives for servicemembers to stay in the military, to gain experience and skills valuable to the services, and to move into critical skills or jobs when they are most needed.

The military can order servicemembers on deployments, but keeping the billets filled and keeping those servicemembers in the military can be difficult. Because of policy-makers' concerns about the negative consequences of deployments, Congress passed the High Deployment Per Diem, or Individual Tempo pay, in the National Defense Authorization Act (NDAA) of FY00. It mandated that the services pay servicemembers an extra \$100 a day when the member's time away from home, over a rolling 2-year period, exceeds 400 days. That pay has been suspended in view of the current conflict.

The QRMC is taking this opportunity to reconsider how to best structure a deployment pay. Its focus is on structuring a new pay that would (a) provide incentives for servicemembers to volunteer for and stay on deployments, (b) keep servicemembers in the military, and (c) be cost-effective.

In designing this pay, the QRMC is looking to existing pays the military uses to alleviate problems filling particular billets. However, few such pays exist. The largest program, with the most extensive history, is sea pay. It is also the pay most similar to a deployment pay. Although it is a servicewide pay, it is paid primarily to Sailors on sea duty. The Navy uses sea pay to retain Sailors at sea and to keep Sailors in the Navy, as well as to compensate for the hardships inherent in all phases of sea duty. Because sea pay is similar to a deployment pay, the QRMC

asked CNA to review the history of sea pay and its success in achieving the Navy's goals. It has also asked CNA to explore the applicability of sea pay qualifications, pay rates, and other elements to a multiservice deployment pay.¹

In this paper, we present a synopsis of sea pay. First, we address the purpose of sea pay and how it has changed through the Navy's history. We look at who has been eligible for sea pay and the size of sea pay relative to basic pay and to manpower expenditures. Much of the material in that section has been documented in previous QRMC or DOD resources, particularly past versions of the *Military Compensation Background Papers*. Our contribution is to organize previously documented historic data in a format that enables review and comparison across time. We also seek to update those papers and to highlight sea pay issues that may be of particular interest to the QRMC.

We next consider sea pay as it has been used in the recent past. We show the sea pay table in place through FY01 and describe the incentives it has provided to Navy Sailors. We also present survey and actual behavioral data suggesting that sea pay helps the Navy fill sea billets, keep Sailors at sea, and retain Sailors. Then, we detail the reforms to sea pay the Navy is currently implementing. We discuss the Navy's objectives and the options they considered. Finally, we consider some implications for a new servicewide deployment pay.

1. See [1] for a complete discussion of structuring a servicewide deployment pay.

Evolution of sea pay

First instituted in 1835, sea pay is one of the military's oldest special pays. Today, although primarily paid to Navy Sailors, sea pay rewards qualifying members from all services who serve at sea. The rationale for sea pay, sea pay eligibility requirements, and sea pay rates have varied over time as the Navy's manning and retention needs have changed. These modifications in sea pay have, in turn, affected total expenditures. This section traces the evolving nature of sea pay and concurrent changes in sea pay expenditures.

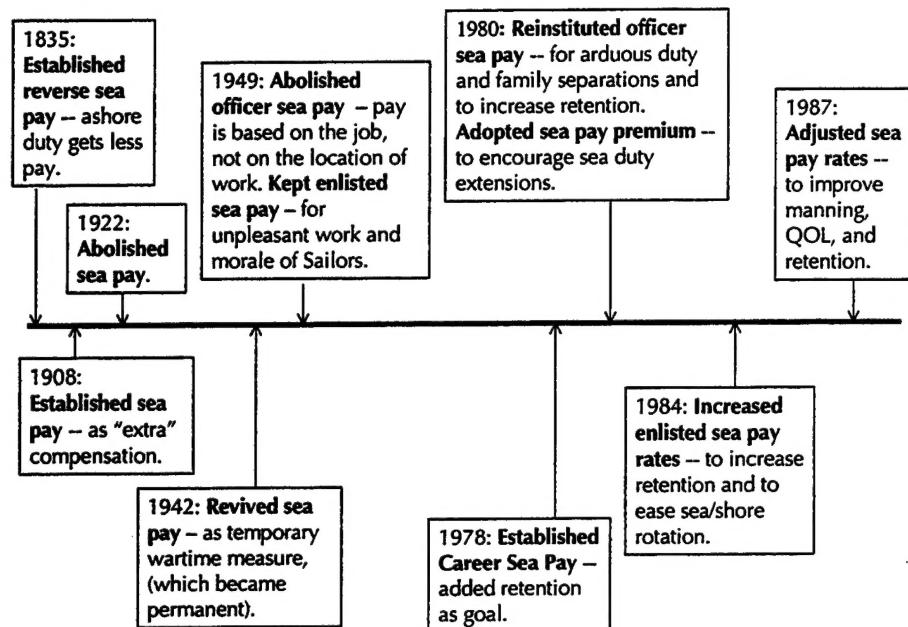
Why sea pay?

Sea pay stems from the belief that sea duty is the essence of a Sailor's job and that a Sailor not serving at sea is "performing less than full-fledged duty" [2, p. 333]. In early Navy history, the Navy recruited enlisted personnel mainly as needed to man a ship as it readied for sea. Officers were often furloughed when a ship returned to port. The result was little shore duty and little need for a sea/shore pay differential.

The first pay differential based on duty status—whether a Sailor was serving at sea or ashore or awaiting orders—was designed so that a Sailor not serving on sea duty received less than full pay. Over time, sea pay became pay above and beyond basic pay. Reversing the original idea of reducing a Sailor's salary while serving ashore, sea pay was implemented as a special and incentive pay to compensate Sailors for the arduous nature of sea duty. The appendix gives a complete history of legislative changes in sea pay, the motivation and goals associated with the changes, and the resulting structure of sea pay.

The rationale for sea pay has evolved as manning and retention needs have changed (see figure 1). Justifications for sea pay fall into the following categories: (a) compensation for arduous duty, (b) retention, (c) distribution incentive, and (d) readiness.

Figure 1. Summary of evolution of the rationale for sea pay



Today, SECNAV Instruction 7220.77D states that Career Sea Pay (CSP) is designed to recognize “the greater than normal rigors of sea duty, the arduous duty involved in long deployments, and the repetitive nature of assignment to such duty.” The Office of the Chief of Naval Operations recently explained in [3] that,

Career sea-pay reform is intended to provide [the] Navy with a flexible and targeted tool to provide the incentive required to improve sea/shore balance, increase retention, reduce crew turnover and improve overall fleet readiness....It is also designed to recognize and reward the arduous nature of sea duty.

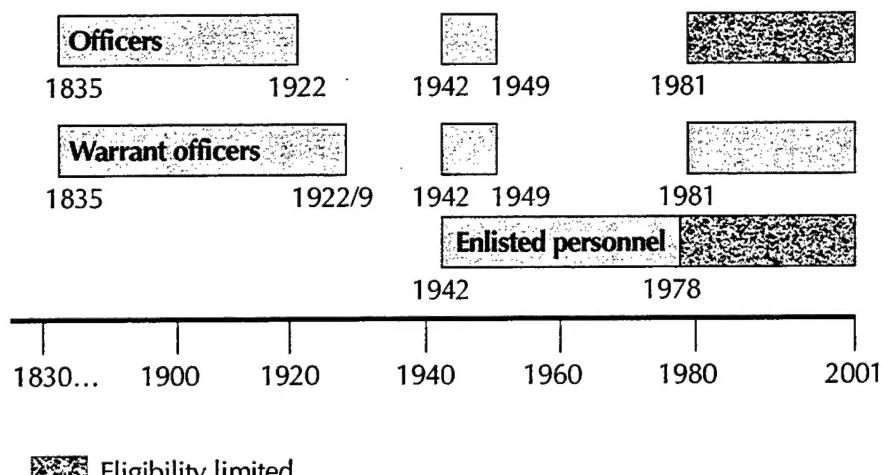
“Arduous duty” has no formal definition but has generally implied, among other things, long working hours at sea, long and repetitive deployments, cramped living and working conditions aboard ship (both at sea and in home port), unpredictability of operating schedules, limited recreational facilities at sea, and family separations.

As the rationale for sea pay has evolved, the Navy has changed its eligibility rules. Figure 2 indicates when commissioned officers, warrant

officers, and enlisted personnel have been entitled to sea pay since its inception in 1835. Periods of partial eligibility include:

- Starting in 1981, only officers who have served a minimum of 3 cumulative years of sea duty have been eligible. Also, from 1981 to 1985, sea pay was not available to O-1s and O-2s with less than 4 years of active enlisted service.
- Starting in 1978, enlisted eligibility has been limited to E-4s and above.

Figure 2. Who has been eligible for sea pay and when^a



a. Through fiscal year 2001.

Although the information in figure 2 reflects changes in the justification for sea pay over time, we note some apparent contradictions. For example, the oldest justification for sea pay is recognition of the arduous nature of duty at sea, yet E-1s to E-3s who serve at sea—presumably performing arduous duty—have not in recent years been eligible for sea pay. As its name implies, Career Sea Pay (CSP) more accurately seeks to reward personnel who accept sea duty—arduous duty—as part of a longer term career decision. The more sea duty one serves, the greater the reimbursement.

Structure of sea pay

As table 1 shows, the structure of sea pay has changed along with its rationale. Often, the Navy has linked sea pay rates to basic pay, paygrade, and/or the amount of sea duty served; however, the Navy has also paid it as a set dollar amount across Sailors. From 1949 to 1979, sea pay was based solely on paygrade. Starting in 1978, when enlisted Career Sea Pay replaced sea duty pay, the monthly pay rate was determined solely by the Sailor's cumulative time on sea duty. Since 1981, CSP rates increase as servicemembers accumulate sea duty and are promoted in rank. Because sea pay rates jump at different points within a Sailor's career, it is possible that a lower ranking Sailor with more years at sea receives more sea pay than a higher ranking Sailor with less sea duty. Overall, the structure rewards careers that are sea intensive and, consequently, is an incentive to servicemembers to serve at sea.

The Career Sea Pay Premium (CSPP), established in 1981, also rewards servicemembers serving on sea duty. The CSPP is a fixed, monthly payment—unrelated to paygrade—that rewards long sea tours. Sailors and officers are eligible for the premium when serving more than 36 consecutive months of sea duty. Through the 1990s, however, enlisted personnel in paygrades E-5 and above with over 5 years of cumulative sea duty could not receive the premium; instead, a higher rate, not contingent on consecutive time at sea, was embedded in the CSP table.

Sea pay rates

As the objectives and needs of the Navy have changed, so have the monthly sea pay rates (see table 1). Until recently, sea pay rates were regulated by United States Code, so any changes to those rates required congressional legislation. The FY01 National Defense Authorization Act eliminated this step; Congress relinquished control of sea pay rates to the service secretaries, within a defined upper bound of \$750 per month.²

2. *National Defense Authorization Act for Fiscal Year 2001*, Title VI, Sec. 619.

Table 1. Sea pay structure and rates over time^a

Year of change	Range	Rate structure	Approximate ratios of sea pay to basic pay	
			Enlisted ^b	Officer ^c
1835	Not available	Annual fixed amount	N/A	Not available
1860	Not available	Premium over shore duty pay with breakpoints by length of sea service	N/A	Not available
1899	Not available	15% premium over shore duty pay for officers	N/A	15%
1908	Not available	10% over basic pay; 10% pay differential for enlisted Navy over enlisted Army	N/A	10%
1922	Eliminated sea pay and pay differential	N/A	N/A	N/A
1942	Not available	10% over basic pay for officers; 20% over basic pay for warrant officers and enlisted	20%	10%
1949	\$8–\$22.50/month	Based on rank	10% in 1949 (2% by 1977)	N/A
1978	\$25–\$55/month	Enacted Career Sea Pay for enlisted based on years of cumulative sea duty. Breakpoints at over 3, 5, and 12 years	4%	N/A
1980	\$29–\$115/month	Added more breakpoints of cumulative sea duty: over 3, 5, 7, 9, 10, 11, and 12 years	4%	N/A
1981	\$100/month	Added Career Sea Pay Premium at \$100 per month after 36 months of sea duty	13% in 1981 (7% by 2001)	5% in 1981 (3% by 2001)
1981	\$50–\$310/month	Based CSP on both rank and years of cumulative sea duty. Breakpoints for officers at between 3 and 12 years. Breakpoints for warrant officers and enlisted at between 1 and 12 years.	21%	9%
1985	\$50–\$410/month	Added breakpoints of cumulative sea duty for enlisted: more than 13, 14, 16, and 18 years	18%	8%
1986	No change	Added more breakpoints of cumulative sea duty for officers: over 14, 16, 18, and 20 years	14%	8%
1989	\$50–\$520/month	No change	17% in 1989 (10% in 2001)	7% in 1989 (5% in 2001)
2001	\$50–\$700/month. Maximum allowed CSP and CSPP increased to \$750 and \$350, respectively.	Extended CSP to sailors in paygrades E1 through E3 and to officers with under 3 years cumulative sea duty. Extended eligibility of CSPP to more senior sailors.	18% in 2001	6% in 2001

a. See the appendix for a history of rate changes within the ranges indicated in this table.

b. E-4 with 3 years of sea duty.

c. O-4 with 3 years of sea duty.

The last two columns of table 1 show the relative magnitude of sea pay by looking at the ratio of sea pay to basic pay for typical servicemembers: an enlisted member in paygrade E4 and a lieutenant commander, both with 3 years of cumulative sea duty. For this enlisted member, sea pay has ranged from 2 to 21 percent of basic pay between 1942 and 2001; for the officer, it has ranged from 0 to 10 percent.

The increases of 1981 were the largest changes in recent history. In addition to establishing the premium for consecutive duty, the CSP program expanded to include officers, eliminated the minimum eligibility requirement of 3 years of sea duty for enlisted Sailors (though it maintained E-4 as the minimum eligible paygrade), and dramatically increased enlisted sea pay rates. For example, Sailors with over 3 years of sea duty received \$29 a month in sea pay in 1980 and a minimum of \$160 in monthly CSP the following year, plus potentially \$100 more in the CSPP.

In contrast, the 1989 sea pay increases were not enough to restore the real value of sea pay to its 1981 levels for most Sailors. Also, Sailors in paygrades E5 and above with over 5 years of cumulative sea duty were no longer eligible for the CSPP. The premium became embedded in the sea pay table for those Sailors—eliminating the 36-month consecutive requirement. These changes increased total sea pay to second-termers upon return to sea duty but did not raise monthly sea pay for Sailors serving over 36 consecutive months. The incentive to return to sea duty was increased, but not the incentive to serve long sea tours.

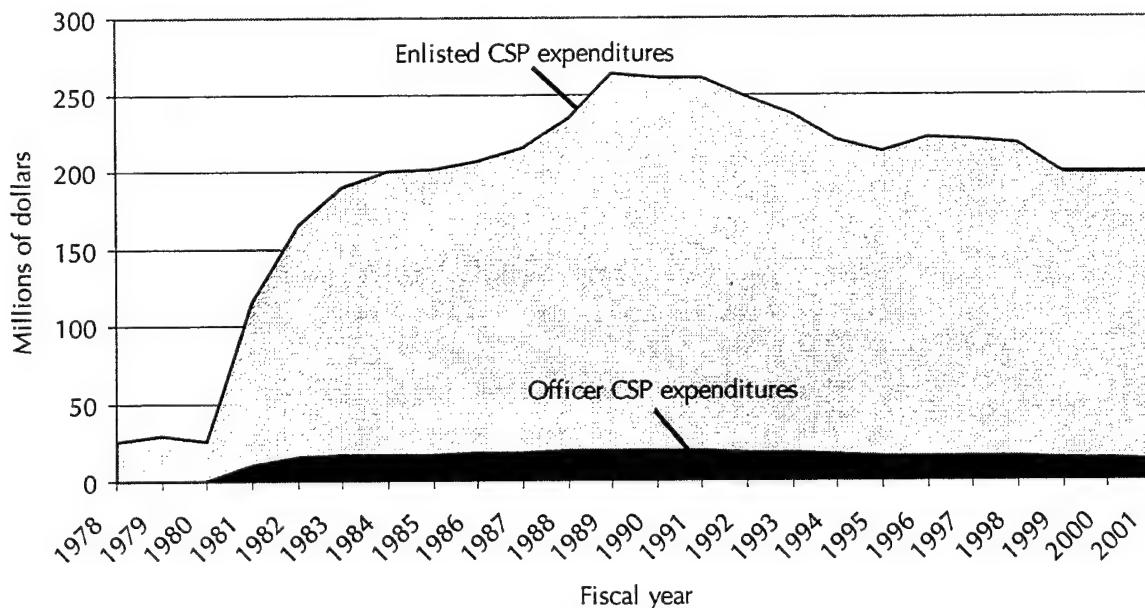
Sea pay expenditures

Figures 3 and 4 illustrate how sea pay expenditures have varied over time. The changes we have described in sea pay eligibility, structure, and rates have contributed to expenditure fluctuations. Other factors include the size and structure of the fleet (which influence manning requirements), deployment patterns, and OPTEMPO.

Enlisted CSP expenditures rose tenfold over the 1980s. The steep jump in the early 1980s (see figure 3) was largely the result of increased rates, implemented in 1980 and 1981, and expanded eligibility also effective in 1981. As we will discuss in the next section, not only were more Sailors receiving sea pay, it appears that Sailors'

average time at sea increased. Both factors led to higher sea pay outlays. The increased expenditures in the late 1980s correspond to the sea pay rate changes in 1989.

Figure 3. Career Sea Pay expenditures across time^{a, b}



a. Figures are in nominal dollars.

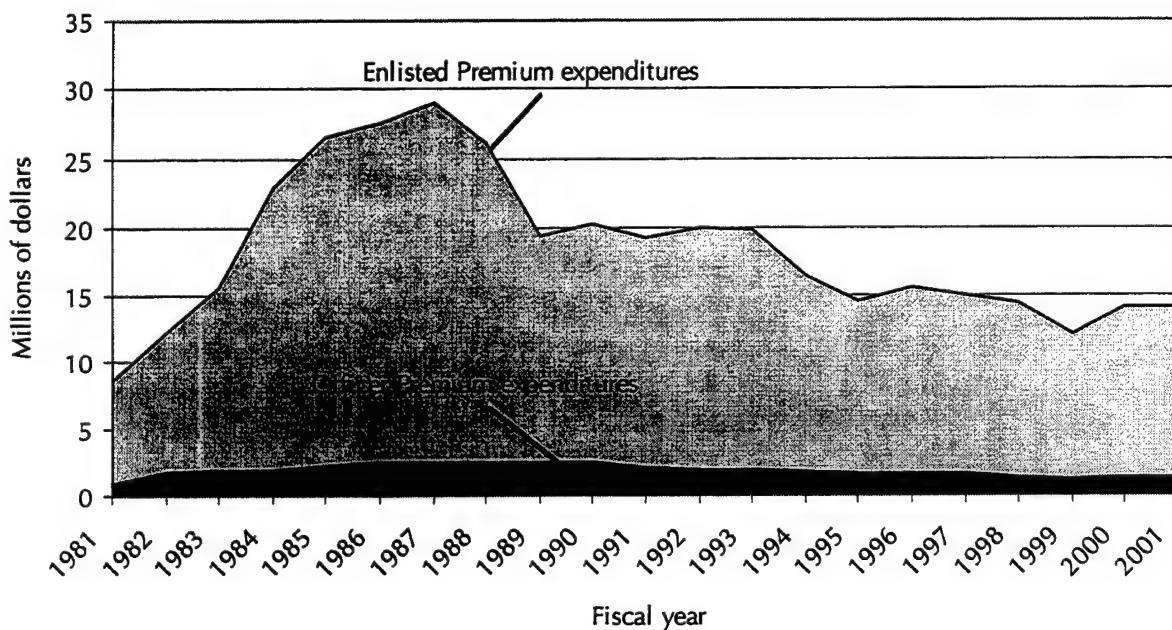
b. FY01 is estimated.

The 1990s, in contrast, saw a continuous decline in CSP expenditures. By 2001, enlisted CSP expenditures were 30 percent lower than 1990, similar to nominal levels observed in the mid-1980s. Most of the reduction corresponds to the drawdown in endstrength; Navy endstrength dropped over 35 percent over the 1990s. However, because the force became more experienced over that time period and because sea pay is tied to rank and time at sea, the average amount paid to Sailors increased. Consequently, nominal sea pay expenditures did not decrease as much as endstrength.

Although the Career Sea Pay Premium rate has remained at \$100 per month since its inception in 1981, total expenditures on the

premium have fluctuated as the number of personnel on sea duty and eligibility requirements for servicemembers have varied (see figure 4). The downward trend in expenditures starting in 1988 reflects tightened eligibility requirements implemented that same year as well as the drawdown.

Figure 4. Sea Pay Premium expenditures across time^{a, b}

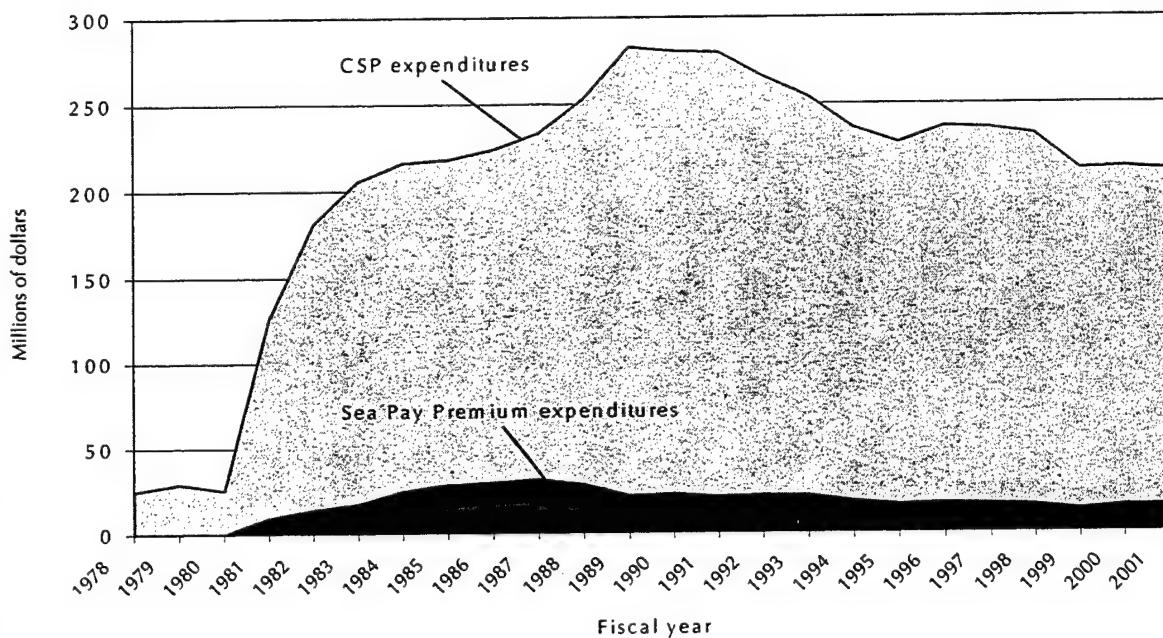


a. Figures are in nominal dollars.

b. FY01 is estimated.

Figure 5 shows total sea pay expenditures. The pattern of total sea pay expenditures follows enlisted expenditures closely; by the end of the 1990s, they were at about the same levels as in the middle to late 1980s. Taking inflation into account, however, it becomes clear that sea pay expenditures have fallen more rapidly than the force size. In fact, for an individual Sailor, sea pay has lost about 40 percent of its value because of inflation since the last changes in FY89.

Figure 5. Total CSP and SPP expenditures across time^{a, b}



a. Figures are in nominal dollars.

b. FY01 is estimated.

Sea pay in recent years

In this section, we describe in greater detail the sea pay program of the 1990s and the incentives it provided. We also present evidence that Sailors do stay at sea longer as sea pay rates increase. Sea pay can be an effective distribution tool.

Eligibility for sea pay

Sea pay is designed to compensate for the rigors of sea duty and to allocate Sailors into sea billets. Thus, according to U.S. Code, Title 37, Section 305a, “sea duty qualifying for sea pay” is duty performed by a servicemember:

- a. While permanently or temporarily assigned to a ship, and
 - While serving on a ship, the primary mission of which is accomplished while under way; or
 - While serving as a member of the off-crew of a two-crew submarine; or
 - While serving as a member of a tender-class ship (with the hull classification of submarine or destroyer).
- b. While permanently or temporarily assigned to a ship and while serving on a ship, the primary mission of which is normally accomplished while in port, but only during a period that the ship is away from its home port [which it defines as (a) at sea or (b) in a port that is more than 50 miles from its home port].
- c. While permanently or temporarily assigned to a ship-based staff or other unit (at the discretion of the Secretariat).

In general, crews on deploying ships and submarines are eligible for continuous sea pay, whereas crews of squadrons and most ship-based

staffs can only receive sea pay while deployed at sea. Continuous sea pay means that Sailors receive the pay whether their ship is currently deployed or in home port. It's important to recognize that sea pay isn't strictly speaking a deployment pay. It is paid based on being assigned to a ship regardless of whether the ship is deployed.^{3,4}

As discussed earlier in this paper, there are restrictions on sea pay eligibility in addition to those just described. Effectively, CSP has been payable, in recent years, to all enlisted Sailors in paygrades E-4 to E-9 while on sea duty, all warrant officers on sea duty, and officers on sea duty who have served a minimum of 3 years of accumulated sea duty. In contrast, the Career Sea Pay Premium has been more restricted. Throughout the 1990s, enlisted Sailors in paygrades E-5 and above with more than 5 years of cumulative sea duty were ineligible to receive it. All other Sailors who qualify for CSP were eligible for the premium once they reached the 36-month consecutive sea duty requirement.

Sea pay as an incentive

By paying more to Sailors on sea duty, the Navy not only compensates them for their arduous duty but also encourages them to go to sea or stay at sea and in the Navy. However, the incentive provided is not the same for every Sailor because both the amount of sea pay and the relative size of sea pay to total pay differ depending on a person's pay-grade and total years of sea duty.

In this section, we consider which Sailors typically have received the largest incentives for sea duty. First, we look at the structure of the sea pay over the 1990s and the relative size of sea pay. Then, we provide evidence regarding the effectiveness of sea pay at inducing additional

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3. A typical Navy deployment schedule is 6 months deployed, followed by 12 or more months in home port.
 4. Many Sailors who serve in billets that count as sea duty for rotational purposes do not qualify for sea pay. For example, there are Sailors in overseas shore billets whose duty qualifies as sea duty for rotational purposes but who do not receive sea pay.

sea duty and retention. In this discussion, we look only at the enlisted force.

Size of sea pay

Table 2 shows the portion of the enlisted sea pay table from the 1990s that applied to most Sailors collecting sea pay. An asterisk denotes those Sailors who were eligible to collect the Career Sea Pay Premium (CSPP).

Table 2. Portion of the Career Sea Pay table used through FY01

	Years of cumulative sea duty								
	1 or less	Over 1	Over 2	Over 3	Over 4	Over 5	Over 6	...	Over 18
E-1 to E-3	0	0	0	0	0	0	0	...	0
E-4	50	60	120	150*	160*	160*	160*	...	160*
E-5	50	60	120	150*	170*	315	325	...	350
E-6	100	100	120	150*	170*	315	325	...	450
E-7	100	100	120	175*	190*	350	350	...	500
E-8/E-9	100	100	120	175*	190*	350	350	...	520

* Eligible for CSPP.

Career Sea Pay ranged from \$50 to \$520 per month. Sea pay rates increased as a Sailor's rank or cumulative time on eligible sea duty increased. The largest jump in CSP occurred at 5 years of cumulative sea duty—an amount typically not completed by first-term Sailors. Consequently, CSP provided the largest rewards for careerists with large amounts of sea duty.⁵

The CSPP, available primarily to relatively junior Sailors because of the rank and cumulative-time-at-sea restrictions, is a \$100 monthly payment for each month of sea duty exceeding 36 months of contin-

5. The officer sea pay table reflects the same incentive structure as the enlisted; however, officer rates are lower for a given level of cumulative sea duty.

uous sea duty. Structured this way, the premium rewards junior Sailors for long sea tours and, consequently, provides an incentive to complete and extend the first sea tour. Because eligible Sailors are typically at their reenlistment when they begin collecting the premium, it is also an incentive to reenlist into sea duty. At the 5-year cumulative point, the CSPP disappeared for most Sailors; instead, there was a concurrent, larger jump in CSP rates. The net increase should have encouraged Sailors to remain on sea duty.

The larger sea pay is as a proportion of total pay, the more attractive we would expect sea duty to look relative to shore duty. Given that sea pay has been targeted to careerists, do careerists typically receive relatively higher proportions of their pay from sea pay? The answer is yes. When the Career Sea Pay table was changed in FY89, careerists typically collected sea pay that matched or exceeded 15 percent of basic pay, even without the CSPP. Sailors at or just beyond their first reenlistment decision could receive much more. For an E-4 with over 3 years of continuous sea duty, sea pay (CSP and CSPP) totaled 26 percent of basic pay. In contrast, sea pay was often much smaller relative to basic pay for more junior Sailors. For example, for E-4s just beginning their sea tours, sea pay was about 5 percent of their basic pay.

Since FY89, inflation has eroded the value of sea pay by about 40 percent, so that, by the end of the 1990s, sea pay made up a smaller portion of a Sailor's compensation. As the value of sea pay has declined, the incentives for Sailors to go to sea and to stay at sea have also eroded.

Do Sailors respond to pay?

We have limited information on the effectiveness of sea pay at influencing Sailors to spend more time at sea and in the Navy; however, the information we have suggests that sea pay can be effective. Here, we give a brief synopsis of the empirical evidence linking sea pay to Sailors' behavior. We also cite survey results indicating Sailors' willingness to serve at sea.

Time at sea

Ideally, to measure whether, and how much, sea pay influences a Sailor's willingness to be on sea duty, we would look at the amount of time the Sailor *chooses* to be on sea duty given different amounts of pay. The Navy, however, relies on compulsory sea duty assignments for prescribed sea tour lengths (PSTs)—currently ranging from 3 to 5 years depending on the paygrade and rating of the Sailor. Because of this, one might expect the time a Sailor spends on sea duty not to reflect a preference for sea duty or responsiveness to sea pay but rather an obligation. In that case, changes in sea pay would have no effect on the amount of time a Sailor serves on sea duty.

The time a Sailor spends on sea duty does, however, reflect in part the willingness of the Sailor to serve at sea. We know this because, despite the obligation, not all Sailors complete their PSTs. For example, for sea tours ending in FY99, 67 percent of Sailors did not complete their sea tours, either because they rotated to shore early or because they left the Navy [4]. Also, for Sailors who do complete sea tours, some extend their sea duty. These extensions are our only measure of voluntary behavior. Variation in extensions in the face of differing levels of sea pay should reflect how Sailors respond to pay.⁶

To determine the effects of the 1981 liberalization of sea pay, Navy manpower analysts examined extensions in sea duty before and after the changes took effect [5]. Using changes in PRD (projected rotation date) to measure additional time served on sea duty,⁷ they found a 58-percent jump in extensions following the increases. They concluded that “the gross statistics, therefore, appear to show that sea pay is a primary factor in encouraging voluntary duty at sea” [5].

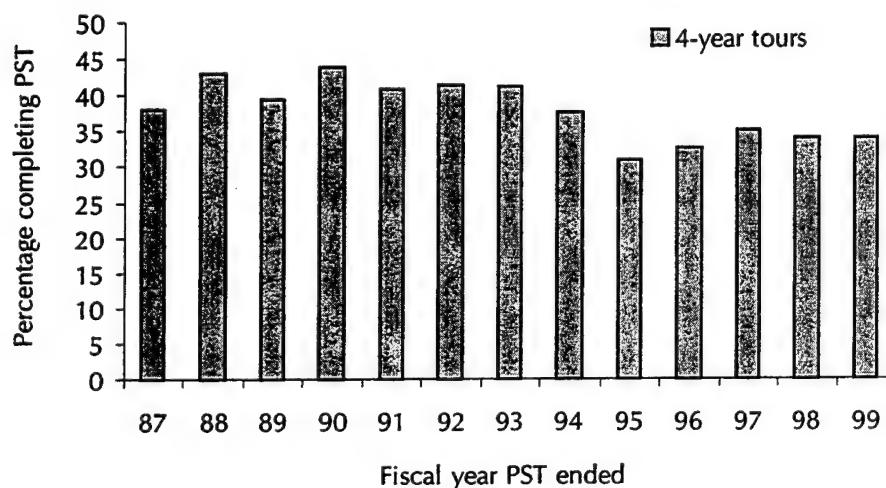
Recent CNA research [4] also investigated the effects of sea pay on time at sea. Instead of using PRD, analysts compared Sailors' completions and extensions of PST from FY87 to FY99. PST completion rates

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6. If Sailors do not know they may extend their tours or if extensions are not granted, any increase in extensions will understate Sailors' responsiveness to sea pay.
 7. Consequently, these extensions could have reflected not only voluntary behavior but also Navy obligated changes to tour lengths.

tell us whether the Navy is getting the sea time it expects from individual Sailors, whereas extensions after PST reflect Sailors' preferences for long sea duty. Behavioral changes in time at sea resulting from the FY89 sea pay change and the loss in sea pay's value since then should be reflected in the extension and extension rates.

Figure 6 shows the trend over time in completion rates for Sailors serving 4-year tours.

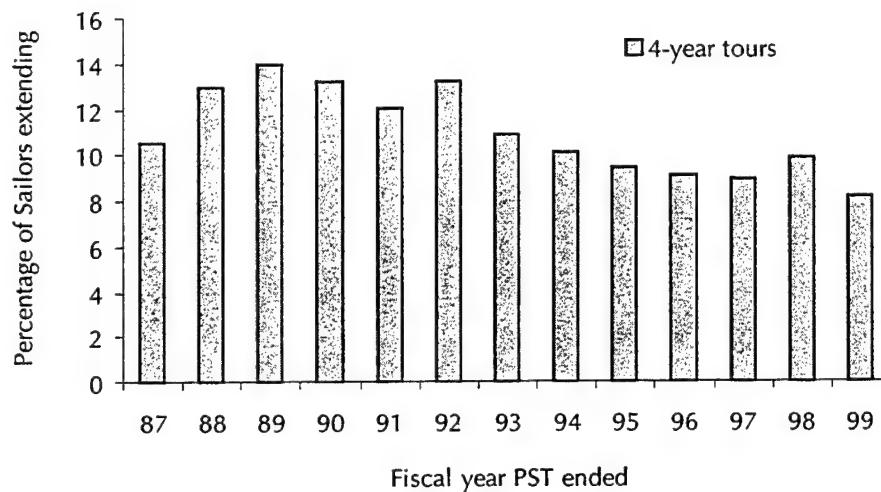
Figure 6. PST completion rates over time



We see that the highest completion rates the Navy experienced in the last decade occurred in the years immediately surrounding the sea pay increase. In addition, while sea pay declined 40 percent over the decade, completion rates for all Sailors on 4-year tours also declined—by about 20 percent. Although these data do not hold constant other factors that may have been changing over the time period, they suggest that sea pay could affect behavior quite substantially.

Figure 7 shows the percentage of 4-year sea tours extended beyond PST. This extension rate is calculated as the number of Sailors who should have rotated to shore but stayed on sea duty at least 6 months past PST divided by the total number of Sailors who should have ended their sea tours.

Figure 7. Voluntary extension of sea duty over time



The changes in voluntary extensions are similar in pattern but more dramatic—as one might expect because extensions do not reflect obligated service at sea. Extensions of sea duty peaked at 14 percent in FY89—the year of the sea pay table changes. We see that, as the value of sea pay declined over the decade, the number of voluntary extensions has also dropped—by almost 40 percent.

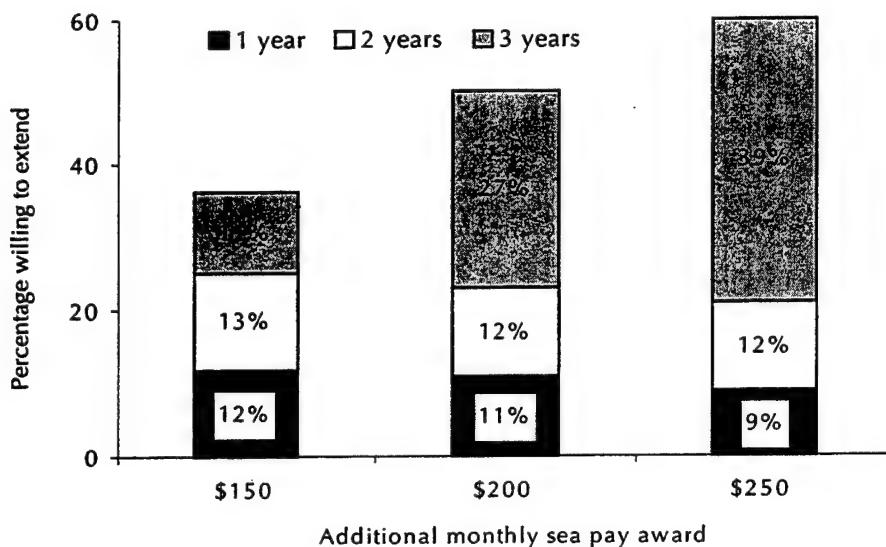
So far, we have seen that, overall, Sailors do respond to changes in sea pay as we expected. Additional information can be obtained from survey data. Several surveys, such as the annual Navy-wide Personnel Survey and the Navy Homebasing Survey in 1996, have included information on Sailors' willingness to extend on sea duty for additional pay.

In a previous CNA study [6] analyzing restructuring sea pay, analysts reviewed previous survey questions and responses. The Homebasing Survey asked particularly detailed questions about whether the Sailor would extend sea duty, and for how long, given several combinations of additional income and the promise of homebasing. The raw data showed that more than one-half of surveyed Sailors were willing to extend at least 1 year for a sea pay premium of \$150 a month and homebasing. Using other survey data and the Enlisted Master Record, the analysts constructed adjusted response rates to quantify how many additional eligible Sailors would extend for additional sea pay alone.⁸

8. The methodology is described in detail in [6].

Figure 8 shows the additional sea pay awards and the associated extension rates.

Figure 8. Additional pay and associated extension rates



These response rates suggest that over 30 percent of eligible Sailors would extend their sea duty at least 1 year for a sea pay increase of \$150 per month. In other words, about 30 percent of Sailors at about 3 years' cumulative time would serve at least 1 additional year on sea duty for a doubling of career sea pay. Given the empirical correlations we've seen, these rates seem plausible. As sea pay increases, more and more Sailors feel adequately compensated for the hardships of sea duty and, thus, additional Sailors are willing to extend.

Retention effects

Finally, we briefly address the value of sea pay as a retention tool. We know that increasing compensation will increase retention. Sea pay is not, however, targeted specifically to Sailors who are reenlisting. As a result, we do not expect sea pay to be as cost-effective at retaining Sailors as an equivalent amount of money targeted to Sailors at the reenlistment point (e.g., Selective Reenlistment Bonuses (SRBs)).

Previous CNA research [6], using the BuPers Annualized Cost of Leaving (ACOL) model, estimated the retention effects of sea pay. The ACOL model calculates the present value of expected streams of income both in and out of the service, then correlates the difference in income to retention, holding all other factors fixed. The retention effects depend critically on whether a given increase in aggregate sea pay spending is targeted to Sailors around the reenlistment point or spread evenly across the sea duty population. For example, increasing sea pay back to its real purchasing power in FY89 (about a \$93-million increase) across-the-board generates an increase in zone A (LOS 2 through 6) retention of about 0.5 percentage point. If, instead, the additional pay were concentrated to the sea duty population coming to the reenlistment point, the retention increase would be over 1 percentage point. In contrast, SRBs targeted to the first term would be about twice as effective at keeping Sailors in the Navy. Sea pay is an effective distribution tool and only secondarily a retention tool.

Sea pay reform

In the late 1990s, two factors led the Navy to reevaluate sea pay. First, sea pay was becoming less effective as a distribution tool. Sea pay had lost about 40 percent of its value to inflation since the last pay change. This meant that there was less incentive for Sailors to complete their sea tours, to extend on sea duty, and to reenlist into sea duty. At the same time, the need for sea pay was growing. During the drawdown of the early 1990s, ships were decommissioned and their Sailors were released to other sea duty faster than Sailors left the Navy. As a result, the percentage of E-4 to E-9 sea billets filled rose to over 95 percent. After the drawdown ended, however, sea manning for E-4 to E-9 Sailors dropped below 90 percent as retention and recruiting problems became evident. Not only did manning problems exist across most ratings, but certain ratings were consistently more undermanned at sea. The Navy was finding that the current structure of sea pay was not flexible enough to deal with these problems. There was no mechanism to target specific skill or rating shortages at sea.

Because of the problems the Navy was facing, it wanted to restructure its sea pay program to better meet its goals. First, the Navy addressed the problem of across-the-board manning shortages by changing the existing sea pay incentive structure. To reduce undermanning at sea for individual skills and ratings, the Navy pursued a new pay (called Sea Tour Extension Pay, or STEP) that could be targeted by skill. The new sea pay table and STEP program, along with changes in the legislative provisions regarding sea pay, make up the Navy's sea pay reform package. This section describes the alternatives the Navy considered, the final sea pay reform package, and the Navy's rationale behind its decisions.⁹

9. See [6] and [7] for full details of the analyses of sea pay reform.

Addressing across-the-board undermanning at sea

Knowing that Sailors are responsive to changes in compensation, the Navy focused on providing incentives to reduce undermanning but also wanted to provide incentives to keep Sailors in the Navy and to reduce crew turnover. The Navy asked CNA analysts to recommend ways the Navy could restructure the sea pay table and premium.

Alternatives

CNA researchers investigated three options targeting different areas of the sea pay table or premium [6]. Using ACOL modeling and survey data on Sailors' willingness to extend, they assessed how well each option performed in increasing time on sea duty, improving Navy retention, and reducing crew turnover. For each alternative, they sized the increase in sea pay to \$93 million—the projected loss in value to inflation by FY02 since the last pay change (in FY89).

Targeting first-term retention

The first alternative, labeled the accelerated phase-in option, targeted increasing first-term reenlistment. This proposal provided additional Career Sea Pay to Sailors at about their first reenlistment point—moving the jump in the CSP table from 5 years' cumulative sea duty to the 3-year point. Sailors in this portion of the table would see their sea pay increase almost \$150 per month—more than double the loss to inflation. Including the sea pay premium, an E-4 with 3 years of sea duty could earn almost \$400 in sea pay each month, or about 25 percent of basic pay.

Another aspect of this option was making more senior Sailors eligible for the Career Sea Pay Premium.¹⁰ This would, of course, not affect first-term reenlistments nor would it be an efficient means to generate additional reenlistments among careerists. Instead, it would eliminate sea pay inversions. Without it, junior Sailors, even if they didn't

10. In this alternative, the premium is embedded in the CSP table for Sailors with more than 8 years of sea duty. That way, Sailors with long careers of sea duty receive the additional payment upon returning to sea duty—not after 36 consecutive months on sea duty.

have more cumulative sea duty time, could collect more total sea pay than senior Sailors because of their eligibility for the CSPP. This expansion should induce additional senior Sailors to rotate to sea early, stay at sea, and/or reenlist in the Navy.

Targeting voluntary extensions of sea duty

Another option investigated was to inject all the additional money into an expanded Career Sea Pay Premium to encourage Sailors to serve longer sea tours—regardless of their cumulative sea duty or rank. This proposal would have increased CSPP rates to \$200 per month after 48 months on consecutive sea duty, while maintaining the rate at \$100 per month for Sailors with 36 to 48 months of consecutive sea duty.

In addition, eligibility for CSPP would have expanded to all Sailors who could receive Career Sea Pay, although careerists who have had sea-intensive careers (greater than 8 years of cumulative sea duty) would receive, instead, \$200 per month extra CSP no matter how long they have been on their current sea tour.

Structured in this way, junior Sailors would not see an increase in sea pay until 48 months on sea duty—the \$100 increase over the CSPP for which they are currently eligible. All senior Sailors, however, would either receive \$200 more per month immediately upon returning to sea duty or \$100 or \$200 per month more after 3 or 4 years of cumulative sea duty, respectively.

Collecting the additional pay at 3 or 4 years of continuous sea duty should induce additional Sailors to complete or extend their tours. With under 50 percent of Sailors completing their sea tours, persuading a significant proportion of Sailors to extend their tours would generate substantial additional years of sea duty and ease undermanning considerably.

A mixed strategy

The Navy will probably be concerned about both first-term retention and undermanning at sea in the foreseeable future. For that reason, one alternative would have increased Career Sea Pay at the reenlistment point for junior Sailors while raising the monthly CSPP rate. To

stay within the \$93-million limit, the jump in the table would be about \$100 per month (less than in the accelerated phase-in alternative), whereas the CSPP would be \$100 per month after 3 years and \$150 after 4 years (less than in the expanded sea pay premium option).

Effectiveness of alternatives

So, how effective would each option be in meeting the goals of the Navy? The CNA researchers estimated how much extra retention and work-years of sea duty the Navy would get for each alternative and compared them to a 40-percent across-the-board increase in the sea pay table. Because the accelerated phase-in compensates Sailors at first-reenlistment relatively more than the other options, it should be the most effective at generating reenlistments. The CSPP expansion, which provides additional pay for long sea tours regardless of whether a Sailor is near reenlistment, should generate the most additional sea duty.

Indeed, the modeling confirmed this hypothesis. The accelerated phase-in generated an additional 0.8 percentage point of first-term retention compared to just over 0.3 percentage point for the CSPP expansion (see table 3).¹¹ Also as expected, the expanded Career Sea Pay Premium generated the most additional work-years of sea duty. The accelerated phase-in, however, would be almost as effective. The Sea Pay Premium sometimes simply shifts sea duty to earlier in careers, whereas the accelerated phase-in serves as an incentive for some Sailors to stay in the Navy to finish their sea tours, after which they leave.

The mixed option and the across-the-board option do significantly worse in creating extra work-years of sea duty. Under these proposals, the additional monthly CSP is just not large enough to create a strong incentive to extend on sea duty.

11. Although the retention effect from the accelerated phase-in may not seem large, it is costly to buy. Using SRBs, it would cost the Navy at least \$40 million.

Table 3. Comparison of options

	Increase in first-term retention ^a	Work-years of sea duty generated
Accelerated phase-in	0.77	9,100
Sea Pay Premium expansion	0.34	9,500
Mixed option	0.48	7,700
Across-the-board sea pay increase	0.48	2,600

a. Percentage points

The Navy's new sea pay table

The Navy decided to implement an accelerated phase-in program because both first-term retention and manning are likely to be important in the longer term. However, the recommended table was modified. The Navy opted to pay the most junior Sailors (E1 to E3s) a small monthly award, and Sailors with little time at sea also received some increase in sea pay. Table 4 shows a portion of the Navy's new sea pay table. At an estimated cost of \$93 million, these changes should increase overall enlisted sea manning by about 4 percentage points. The new sea pay table and expanded Sea Pay Premium eligibility became effective in October 2001.

Table 4. Portion of the new sea pay table and eligibility for SPP

	Years of cumulative sea duty									
	1 or less	Over 1	Over 2	Over 3	Over 4	Over 5	Over 6	Over 7	...	Over 18
E-1	50	50	50	50	50	50	50	50	...	50
E-2	50	60	75	75	75	75	75	75	...	75
E-3	50	60	100	100	100	100	100	100	...	100
E-4	70	80	160	280*	290*	290*	290*	290*	...	390
E-5	70	80	160	280*	300*	315*	325*	350*	...	450
E-6	135	135	160	280*	300*	315*	325*	350*	...	550
E-7	135	135	160	305*	320*	350*	350*	375*	...	600
E-8/E-9	135	135	160	305*	320*	350*	350*	375*	...	620

*Denotes Career Sea Pay Premium eligibility.

In addition, the Navy actively sought to remove sea pay rates from United States Code, and it succeeded. The NDAA for FY01 permits the service secretaries to set the individual Career Sea Pay rates up to a maximum monthly award of \$750 per month. This action allows the services greater flexibility and responsiveness to quickly change the sea pay rates as manning conditions warrant.

Reducing rating-specific shortages at sea

Changing the structure of Career Sea Pay can alleviate across-the-board sea manning shortages or shortages by rank. The pay table, however, does not have the flexibility to address occupational differences in undermanning.

Because some ratings and skills are perennially undermanned at sea, the Navy proposed a new, rating-targeted sea pay—the Sea Tour Extension Program. The Navy envisioned it as a pay that would induce Sailors in selected ratings or skills to voluntarily extend their sea tours past PRD—when the Sailor would have rotated to shore duty. However, the Navy did not want to encourage Sailors to stay on sea duty indefinitely, so did not want to build in added incentives for very long extensions of sea duty. Instead, STEP was to be a flat monthly award, regardless of the length of the extension. Similar to the SRB program, the Navy would monitor undermanning by rating and add or subtract ratings from the eligible list as manning problems develop or dissipate. This structure then rewards extra-long sea tours while providing flexibility in addressing pockets of undermanning at sea. The Navy has quit pursuing a STEP pay, however, until the implications of the High Deployment Per Diem, or Individual Tempo pay, are fully understood.

Conclusion

Historically, the Navy has used sea pay extensively to compensate Sailors—mainly careerists—for the rigors of sea duty. As such, it has not been a deployment pay, but rather paid throughout the sea tour (even when the ship is in port).

Although sea pay is used to compensate Sailors for arduous duty, the Navy has long recognized the role of sea pay in fulfilling its manning and retention needs. Survey and behavioral data confirm that Sailors do respond to changes in sea pay. Additional compensation paid for serving at sea is an inducement for Sailors to go to sea, complete their sea tours, and even extend their tours. The additional pay is also an inducement to stay in the Navy.

Under the most recent sea pay reform, the Navy considered the goals it would like sea pay to help achieve and sought to structure sea pay to create significant incentives to fulfill those goals. Specifically, the Navy hopes that sea pay can alleviate manning shortages (both across the board and in certain ratings) and increase first-term retention. Consequently, it is increasing sea pay the most for Sailors late in their first sea tours to encourage them to reenlist into sea duty and complete or extend their sea tours. Also, the Navy has worked to create a more flexible sea pay system that can respond more quickly to changing conditions or goals.

What does the Navy's experience suggest about structuring a deployment pay? First, servicemembers do respond to pay. But how large the pay is and its eligibility criteria will determine whether it fulfills the goals of the pay. Because of this, it is important to determine what behavior the military wants to encourage or reward and from whom.

If the services want to reward a career of arduous deployments, one way to do so would be to increase the monthly deployment pay as a servicemember's cumulative time away increases (similar to the rate

structure for Career Sea Pay). Another option for the services is to reward servicemembers for long or intensive periods of time away. If, over a given time period, certain thresholds of time away are exceeded, the services could begin paying a bonus. The CSPP, STEP, and the High Deployment Per Diem all incorporate this incentive structure.

In either case, because deployment patterns and time away vary widely by service, the individual services may need to tailor a deployment pay to their individual needs. With resources limited, it is particularly important that any deployment pay be designed both to meet the services' goals and to have sufficient flexibility to meet the services' needs as those needs change.

Appendix: Evolution of sea pay over time

Table 5. Evolution of sea pay over time¹

Year	Implementing document	Associated event/trigger	Purpose/justification	Nature of the pay
1813	Act of March 9, 1813	War of 1812	"Special appropriation"	
1835	Act of March 3, 1835	Instituted under the theory that Sailors not at sea were performing "less than 'full- fledged' duty." ² Sailors serving on shore, therefore, received a reduced pay.	First within-grade differential pay linked to duty status—at sea, on other duty, or on leave or waiting orders. For Navy officers only.	Annual fixed amount paid to lieutenants for sea service. Annual fixed amount paid to warrant officers for sea service and frigate duty (also at sea).
1860	Act of June 1, 1860		For the first time, recognized length of an individual's cumulative sea service as a pay factor (for some officer grades only). Continued within-grade differentials for officer sea duty pay.	In addition to duty status differentials, prescribed pay steps based on length of sea service for the grades of LT (from 1860-62) and warrant officers (from 1860-70).
1899	Act of March 3, 1899 ³		Similar rationale to Act of 1835 (see above).	Entitled Navy officers performing sea duty to no less pay than Army officers of corresponding rank, but to 15% less than Army officers when ashore or awaiting orders.
1908	Act of May 13, 1908		Terminated duty status differentials for commissioned Navy officers. Continued differential for warrant officers	Established basic pay rates for officers based on grade and length of service. Established the principle of sea pay as "extra" compensation for sea duty by entitling officers to an additional 10%

¹ Unless otherwise indicated, all data in the table are from the Fifth Edition of *Military Compensation and Background Papers: Compensation Elements and Related Manpower Cost Items: Their Purposes and Legislative Backgrounds*, published in September 1996 by the Office of the Secretary of Defense, Department of Defense.

² *Military Compensation Background Papers: Compensation Elements and Related Manpower Cost Items: Their Purposes and Legislative Backgrounds*. Department of Defense, Office of the Secretary of Defense, Second Edition, July 1982.

³ All information regarding the Act of March 3, 1999, comes from *Military Compensation Background Papers: Compensation Elements and Related Manpower Cost Items: Their Purposes and Legislative Backgrounds*, Department of Defense, Office of the Secretary of Defense, Third Edition, June 1987.

Year	Implementing document	Associated event/driver	Purpose/justification	Nature of the pay
1922	Joint Services Pay Act ⁴		and mates. No sea duty pay for enlisted personnel per se, but Act implemented flat 10% pay raise for enlisted, which created 10% differential between Navy enlisted and enlisted in other services.	over their basic pay while serving on sea duty.
1942	Act of March 7, 1942	World War II	Repealed 10% provision enacted in 1908.	Revived sea pay and foreign duty pay as temporary wartime measures. Extended sea pay to enlisted personnel for first time.
1942	Pay Readjustment Act of 1942		Enacted the provisions established by the Act of March 7, 1942, into permanent law.	Entitled commissioned officers to receive an additional 10% and enlisted personnel and warrant officers an additional 20% over basic pay while performing sea duty.
1949	Career Compensation Act of 1949	1948 Hook Commission (military compensation study)	Hook Commission recommended that sea pay (and Foreign Duty Pay) be abolished for officers and disconnected from basic pay rates for enlisted (because the Navy is a chosen career and sea duty is a given in a naval career). Also recommended that there be a flat pay raise for enlisted personnel for "disagreeable and	Abolished sea duty pay for officers. Prescribed monthly sea duty payments for enlisted personnel (ranging from \$8 to \$22.50) (in 1949, these equalled roughly 10% of enlisted pay; by 1979, this supplemental pay was only about 2.5% of enlisted pay, thereby losing its incentive value).

⁴ Working papers from the 5th QRMC slightly contradict this description of the 1922 Act: the 5th QRMC states that the Joint Services Pay Act terminated all Foreign Duty Pay and most Sea Pay, except for the sea duty differential for Navy warrant officers. It went on to explain that the Act of February 16, 1929, terminated this sea duty differential for warrant officers (after 94 consecutive years).

Year Implementing document	Associated event/driver	Purpose/justification	Nature of the pay
1967-1970 ⁵	unpleasant work as a morale factor. ⁵ Also said, "Officers, especially, do not deserve extra pay for this type duty, since the pay recommended for them is apportioned to their relative responsibility as executives and administrators, regardless of their site of operation."		
1976	Defense Manpower Commission	Navy proposed sea pay under the "recognition-of-arduous duty" philosophy. OMB and other parties unsuccessfully tried to tie sea pay to retention and/or recruitment efforts and to create a bonus-type sea pay.	Argued that sea pay should be restructured for recruitment and retention of personnel in undermanned skills.
1978	OSD report (response to Defense Manpower Commission)	OSD argued that sea pay is "required" to: (1) distinguish between sea and shore duty and, thus, "increase tolerance for	

⁵ *Career Compensation for the Uniformed Forces, A Report and Recommendation for the Secretary of Defense by the Advisory Commission on Service Pay*, pp. 28-29, December 1948.

⁶ *Fifth Quadrennial Review of Military Compensation, Volume III: Special and Incentive Pays; Department of Defense, Office of the Secretary of Defense, November 1983.*

Year	Implementing document	Associated event/driver	Purpose/justification	Nature of the pay
			repetitive sea duty tours in the course of a Navy career. ⁷ Stated that the prospect of sea duty actually helps recruitment, but loses its appeal once a Sailor experiences the arduous duty of life onboard a ship, and then becomes a disincentive to remain in the Navy.	
1978	Legislative proposal	FY 1979 Department of Defense Appropriation Authorization Act, 95 th Congress. DOD cited	It also stated, however, that "sea pay...is not the vehicle to address the problem of Navy manpower shortages." Instead, the report argued that Selective Reenlistment Bonuses were best suited for that purpose.	Navy modified its position that the only reason for sea pay was "recognition of arduous duty" and added the goal of retention as a purpose for sea pay.

⁷ *Fifth Quadrennial Review of Military Compensation, Volume III: Special and Incentive Pays; Department of Defense, Office of the Secretary of Defense, November 1983*, p. 616. Originally written in OSD, Department of Defense Response to the Report to the President and the Congress by the Defense Manpower Commission, Washington, DC, January 1978, p. 133.

Enacted Career Sea Pay (CSP). An enlisted E-4 or above (of any service) who had served more than 3 years on sea duty qualified for monthly CSP payments when performing such duty. CSP was rated under the idea that those who serve longer

Year	Implementing document	Associated event/driver	Purpose/justification	Nature of the pay
1979, and codified by 37 U.S.C. 305a.	"unique conditions" of sea duty" and "competition for quality manpower among the services and with civilian industry."	Navy ships] with experienced personnel."	at sea deserve more pay.	<ul style="list-style-type: none"> - For FY79-80, authorized pay for 3 types of career sea duty: over 3, 5, and 12 years. For FY81: over 3, 5, 7, and 12 years. Beginning Oct. 1981: over 3, 5, 7, 9, 10, 11, and 12 years. - For FY 79-81, CSP rates ranged from monthly payments of \$25 to \$55. Beginning Oct. 1, 1981, CSP rates ranged from \$25 to \$100 a month. <p>Periods of sea duty served before implementation of the act were credited to determine a member's eligibility and pay rate.</p>
Effective October 1978 and September 1980.				
1980	Military Personnel and Compensation Amendments of 1980 (aka the Nunn-Warner Bill)	Apparent poor effect of sea pay and loss of experienced personnel. ⁹ Effective September 1, 1980.	According to the amendment: "to provide retention incentives to Navy personnel coming to the end of their first term of enlistment." ¹⁰ According to the conference report: "the Navy's shortage of petty officers, especially those with six to twelve years of service."	Increased (by 15%) and accelerated effective date of sea pay rates as proposed by the 1979 DOD Appropriation Authorization Act.
1981	Military Pay and Allowances Benefits	Effective Jan. 1, 1981.	Rejected Hook Commission's notion that sea duty was	Extended CSP to officers , except those in grades O-1 and O-2 who had served less than four years

⁸ Specifically, the report cited the following "unique conditions": cramped living and working conditions aboard ship; the unpredictability of operating schedules of Navy ships; limited recreational facilities at sea; inport duties assigned to shipboard personnel to maintain ship readiness; long working hours at sea; long and repetitive deployments; and family separations.

⁹ *Fifth Quadrennial Review of Military Compensation, Volume III: Special and Incentive Pays*; Department of Defense, Office of the Secretary of Defense, November 1983, p. 617.

¹⁰ *Fifth Quadrennial Review of Military Compensation, Volume III: Special and Incentive Pays*; Department of Defense, Office of the Secretary of Defense, November 1983, p. 559. Originally found in: Radler, Norvin E.; Pappas, Linda D.; Gilliam, C. Forrest; and Finneran, John G., *Analysis of Sea Pay Program* (GRC Report 1077-22-80-CR), McLean, VA: General Research Corporation, June 1980, p. 144.

Year	Implementing document	Associated event/driver	Purpose/justification	Nature of the pay
1980	Act of 1980	"normal service for Navy officers."	"normal service for Navy officers."	of active enlisted or NCO service.
1981	Uniformed Services Pay Act of 1981	Reinstituted officer sea pay as reward for arduous duty and family separations and to address retention problems among Navy officers in certain skills. Adopted CSP Premium "to compensate...members who are on three year shore tours or less and who volunteer beyond the prescribed sea service tour." ¹¹	Made CSP rates dependent on years of cumulative sea duty and pay grade (new). Increased enlisted CSP rates "substantially." Entitled all enlisted members in pay grades E-4 and above and all warrant officers assigned to sea duty (as defined in 37 U.S. Code 305a)—not just those with more than 3 years of sea duty—to sea pay. On the other hand, CSP was available only to those officers who had accumulated more than three years of sea duty. Made CSP payable to personnel assigned to a ship, a ship-based staff, or a ship-based aviation unit while actually serving on a ship. Personnel serving on ships whose primary mission was achieved in port were only eligible for sea pay when the ship was away from its homeport for 30 consecutive days or more.	Also established a flat monthly Sea Pay "Premium" to be paid to military personnel (of any service) for each subsequent month of sea duty immediately following completion of 36 months of consecutive sea duty.

¹¹ Original quote came from Senate Report No. 96-1051, p. 2, accompanying H.R. 7626, 96th Congress, 2d Session.

Year	Implementing document	Associated event/driver	Purpose/justification	Nature of the pay
		[crews]...that...have to remain on station for a prolonged period of time." ¹² Sen. Tower also explained that sub crew members spend 50% of their time at sea, which is more than others entitled to CSP. Also, because there is a requirement for officers to accumulate 36 months of cumulative sea duty to qualify for CSP, officers on two-crew subs take much longer to qualify, which adversely affects retention.		
1984	Department of Defense Authorization Act, 1985	The stated purpose was to increase retention of enlisted personnel, in order to, in turn, "ease sea-to-shore rotation pressures, thereby facilitating increased utilization of the reserves." ¹³		Increased E-6 through E-9 CSP rates. Added four more cumulative-years-of-sea-duty categories for all qualifying enlisted personnel: over 13, 14, 16, and 18 years.
1985	Department of Defense Authorization Act, 1986	Perhaps the conclusions of the Fifth QRMIC, which had included the finding that surface warfare O-2s had retention rates "well below 50 percent."	Congress submitted no justification, but implemented exact recommendations of 5 th QRMIC, which had argued that it was an "inappropriate penalty" to withhold CSP from O-1 and O-2 grade officers who had served three years of sea duty.	Increased warrant officer (W-3 and W-4) CSP rates. Added four more cumulative-years-of-sea-duty categories for all warrant and commissioned officers: over 14, 16, 18, and 20 years.
1987	National Defense	At the urging of DOD.	"To improve the quality of life of	Extended CSP to officers in O-1 and O-2 pay grades with less than four years of active enlisted or NCO service.
				Adjusted rates of CSP for enlisted personnel and

¹² Original quote from U.S. Senator Tower of Texas. *Congressional Record*, September 10, 1981, Volume 127, No. 124, p. S9393.

¹³ Original quote is from House Report No. 98-1080 (Committee of Conference), p. 298, accompanying H.R. 5167, 98th Congress, 2d Session (1984).

Year	Implementing document	Associated event/driver	Purpose/justification	Nature of the pay
1988	Authorization Act (NDAA) for FYs 1988 and 1989	Enlisted sea pay rate changes effective 1 May 1988.	service members and their families, while preserving high levels of personnel readiness. ¹⁴ Justification by the House Armed Services Committee included the purpose of increasing compensation for personnel on their second sea tour and decreasing compensation for personnel on their first sea tour.	warrant officers: increased rates for enlisted with >5 years of sea duty, decreased rates for enlisted with <5 years of sea duty; increased rates for W-1-W-3s with >9 yrs of sea duty and W-4s with >10 yrs of sea duty. Did not change officer CSP rates.
1989		Warrant officer sea pay rate changes effective 1 January 1989.	Eliminated Sea Pay Premium for enlisted E-5s and above with >5 yrs sea duty. ¹⁵	Changed definition of "sea duty" to include all time spent on ships, the primary mission of which is accomplished in port (including time in port and time at sea for less than 30 consecutive days, as previously regulated).
2000	FY 2001 Defense Authorization Act		Congress relinquished control of sea pay rates to the Navy, within defined monetary bounds.	Adopted a "save pay" provision to prevent a cut-in-pay entitlement for personnel whose career sea pay entitlement would otherwise have been cut under the new rates, as long as they stayed assigned to the same duty station.

¹⁴ 1998 Annual Report to the President and the U.S. Congress. William S. Cohen.

¹⁵ The Fifth Edition of the *Military Compensation Background Papers* notes that the effect of this change, together with the change in sea pay rates, was "such that enlisted personnel with more than five years of sea duty are now automatically entitled to roughly the same career sea duty pay they would have been entitled to if they had served more than 36 consecutive months of sea duty and had accordingly been entitled to premium career sea duty pay in addition to their regular career sea duty pay."

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